

## **REMARKS/ARGUMENTS**

### **Status of Claims**

The claims have not been amended. A current listing of claims is provided for the easy reference of the Examiner.

Claims 1-30, 34-36 remain in the application.

Claims 31, 32, 33 and 37 remain cancelled.

### **35 U.S.C. 102 Rejections**

In the Final Action, The Examiner has maintained the rejection of claims 1-3, 5-17, 20, 24-26, 28 and 34-36 as not complying with paragraph 35 U.S.C. § 102(e). The rejection is based on the claim being anticipated by Levandovsky et al. (U.S. patent no. 7,095,956" hereinafter "Levandovsky").

Claim 1 reads:

1. In a network comprising a plurality of nodes interconnected by optical fiber segments, a method of determining the viability of a signal path through the network, comprising the steps of:

identifying at least one optical effect that impacts the viability of the signal path;

identifying at least one base variable upon which the identified optical effects depend;

approximating a value for the impact of each identified optical effect on the performance of a signal as a function of each identified base variable;

assigning a performance value to the signal at its introduction into the network;

for each successive segment in the signal path, recalculating the impact of

each identified optical effect on the performance value as the signal passes through the segment; and comparing the resulting performance of the signal after passage along the signal path against an acceptable threshold to determine the path's viability. (emphasis added)

The Examiner has rejected claim 1 on the basis that it is anticipated by Levandovsky and it and therefore fails to comply with paragraph 35 U.S.C. § 102(e). In particular, it is contended by the Examiner that:

Levandovsky et al teaches in col. 3, lines 49-60 that noise is an optical effect that impacts the viability of the signal path. Levandovsky et all teaches in col. 23, line 24 that noise depends on passive fiber and active optical amplifier." In other words, Levandovsky et al. identifies two base variables, namely, passive fiber and active optical amplifier, upon which the identical optical effect, i.e. noise, depends.

Applicant maintains the position set forth in its response dated March 6, 2008, that "the limitation of "identifying at least one base variable upon which the identified optical effects depend" is not taught by Levandovsky and requests that the Examiner reconsiders this matter in view of the following remarks.

## **1. Noise as an Optical Effect**

The Examiner argues that Levandovsky, at col. 3, lines 49-60 teaches that noise is an optical effect impacting the viability of the signal path. Applicant does not dispute this.

## **2. Passive Fiber and Active Optical Amplifier as Base Variables**

The Examiner then cites col. 23, line 24 of Levandovsky as evidence of the use of base variables. Col. 23, line 24 provides:

We shall characterize every device in the transmission path, be it passive fiber, active optical amplifier or an OXC by its associated noise figure, conventionally defined as (here  $z = 0$  is assumed to correspond to the device input):

$$NF^o(z) = \frac{SNR^o(0)}{SNR^o(Z)}$$

Applicant does not likewise dispute that every device in an optical network may be characterized by a noise figure. However, the Examiner is taking the position that the cited device types (i.e. passive fiber, active optical amplifier and optical cross-connect) are base variables themselves which is simply not true.

Consider, for example, the base variables cited in the present application, namely (i) fiber type, (ii) length of segment, (iii) length of fiber span, (iv) number of wavelengths, and (v) power level.

By contrast, passive fiber and active optical amplifiers are types of devices. The construction of “device type” as a base variable is improper, but Levandovsky does not teach anything to that effect.

Therefore, Levandovsky does not include all the elements recited by claim 1, and as such, Levandovsky does not anticipate claim 1. The Applicant respectfully requests that the Examiner withdraw the rejection of claim 1 under 35 U.S.C. 102(e), and the rejection of claims 2-3, 5-17, and 20 which depend thereon.

Claim 24 contains the limitation “a quantifier to determine the value of at least one identified base variable upon which optical effects that impact the viability of the signal path are dependent”. For the same reasons as mentioned in respect of claim 1, the Applicant respectfully requests that the Examiner withdraw the rejection of claim 24 under 35 U.S.C. 102(e), and the rejection of claim 25 which depends thereon.

Claim 26 includes the limitation of “a quantifier to determine the value of at least one

identified base variable upon which optical effects that impact the viability of the signal path are dependent for the at least one downstream segment” For the same reasons as mentioned in respect of claim 1, the Applicant respectfully requests that the Examiner withdraw the rejection of claim 26 under 35 U.S.C. 102(e).

Claim 28 includes the limitation of “a quantifier to determine the value of at least one identified base variable upon which optical effects that impact the viability of the signal path are dependent on the at least one downstream segment” For the same reasons as mentioned in respect of claim 1, the Applicant respectfully requests that the Examiner withdraw the rejection of claim 28 under 35 U.S.C. 102(e).

Claim 34 includes the limitation of “determine the value of at least one identified base variable upon which optical effects that impact the viability of the signal path are dependent” For the same reasons as mentioned in respect of claim 1, the Applicant respectfully requests that the Examiner withdraw the rejection of claim 34 under 35 U.S.C. 102(e).

Claim 35 includes the limitation of “determine the value of at least one base variable upon which optical effects that impact the viability of the signal path are dependent for the at least one downstream segment” For the same reasons as mentioned in respect of claim 1, the Applicant respectfully requests that the Examiner withdraw the rejection of claim 35 under 35 U.S.C. 102(e).

Claim 36 includes the limitation of “determine the value of at least one identified base variable upon which optical effects that impact the viability of the signal path are dependent on the at least one downstream segment” For the same reasons as mentioned in respect of claim 1, the Applicant respectfully requests that the Examiner withdraw the rejection of claim 36 under 35 U.S.C. 102(e).

### **35 U.S.C 103 Claim Rejections**

The Examiner has rejected claim 4 under 35 U.S.C. 103(a) as being unpatentable over Levandovsky in view of Solheim et al. (U.S. Patent 7,190,902) hereinafter “Solheim”.

The law on obviousness under 35 U.S.C. 103 was recently addressed in *KSR Int'l v. Teleflex, Inc.*, No. 04-1350, slip op. at 14 (U.S., Apr. 30, 2007). Following this, examination guidelines were released on October 10, 2007 in regards to determining obviousness under 35 U.S.C. 103. According to these guidelines, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.* 383 U.S. 1,148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the Court are as follows:

- (1) Determining the scope and content of the prior art;
- (2) Ascertaining the differences between the claimed invention and the prior art; and
- (3) Resolving the level of ordinary skill in the pertinent art.

The *Graham* factors, including secondary considerations when present, are the controlling inquiries in any obviousness analysis. The *KSR* case states that there must be “an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” According to *KSR*, for the Patent Office to properly combine references in support of an obviousness rejection, the Patent Office must identify a reason why a person of ordinary skill in the art would have sought to combine the respective teachings of the applied references.

(1) The Examiner did not properly determine the scope and content of the prior art

Claim 4 depends on claim 1.

As noted above in connection the argument submitted in respect of claim 1, Levandovsky does not include the limitation of “identifying at least one base variable upon which the identified optical effects depend.” Solheim does not cure the deficiency in Levandovsky.

It is therefore submitted that the Examiner has not properly determined the scope and content of the prior art. It is therefore not necessary to have regard to the other two *Graham* factors.

For all of the foregoing reasons, Applicant submits that the Examiner has failed to properly determine the scope and content of the prior art and as a result, has not met the first of

the **Graham** factors mentioned by the U.S. Supreme Court in **KSR**.

In view of the foregoing, Applicant respectfully requests that the rejection of claim 4 under 35 USC 103(a) claims be withdrawn.

The Examiner has rejected claims 18 under 35 U.S.C. 103(a) as being unpatentable over Levandovsky in view of Bickham et al. (U.S. Patent no. 6,943,935).

Claim 18 depends on claim 1.

The Examiner has rejected claim 19 under 35 U.S.C. 103(a) as being unpatentable over Levandovsky in view of Denkin et al. (U.S. patent no. 6,980,740).

Claim 19 depends on claim 1.

As noted above in connection the argument submitted in respect of claim 1, Levandovsky does not include the limitation of “identifying at least one base variable upon which the identified optical effects depend.” Denkin et al. does not cure the deficiency in Levandovsky.

The Examiner has rejected claims 21-23 under 35 U.S.C. 103(a) as being unpatentable over Levandovsky.

Claims 21-23 depend on claim 1.

As noted above in connection the argument submitted in respect of claim 1, Levandovsky does not include the limitation of “identifying at least one base variable upon which the identified optical effects depend.”

The Examiner has rejected claims 27, 29-30 and 32-33 under 35 U.S.C. 103(a) as being unpatentable over Levandovsky in view of Beine et al. (U.S. Patent no. 6,701,087).

Claims 32-33 have been cancelled.

Claim 27 depends on claim 26.

As noted above in connection the argument submitted in respect of claim 26,

Levandovsky does not include the limitation of “a quantifier to determine the value of at least one identified base variable upon which optical effects that impact the viability of the signal path are dependent for the at least one downstream segment”. Beine et al. does not cure the deficiency in Levandovsky.

Claims 29 and 30 depend on claim 28.

As noted above in connection the argument submitted in respect of claim 28, Levandovsky does not include the limitation of “a quantifier to determine the value of at least one identified base variable upon which optical effects that impact the viability of the signal path are dependent for the at least one downstream segment”. Beine et al. does not cure the deficiency in Levandovsky.

In summary, it is therefore submitted that the Examiner has not properly determined the scope and content of the prior art. It is therefore not necessary to have regard to the other two **Graham** factors.

For all of the foregoing reasons, Applicant submits that the Examiner has failed to properly determine the scope and content of the prior art and as a result, has not met the first of the **Graham** factors mentioned by the U.S. Supreme Court in **KSR**.

In view of the foregoing, Applicant respectfully requests that the rejection of claims 4, 18, 19, 21-23, 27, 29-30, and 32-33 under 35 USC 103(a) claims be withdrawn.

In view of the foregoing, early favourable consideration of this application is earnestly solicited.

Respectfully submitted,

LAURA HADDEN

By

Elliott Simcoe  
Reg. No. 50,010  
Smart & Biggar

Date: August 12, 2008  
Ottawa, Ontario, Canada  
Tel.: 613-232-2486